CLAIMS

1.   A method (100) for adaptively segmenting pixel elements in an image frame
comprising the steps of:
        segmenting pixel elements into at least one first region based on a
selection criteria (110);
        refining said selection criteria (150) based on information associated
with each of said pixel elements within an associated first region; and
        segmenting (160) said image pixel elements into at least one second
region based on said refined selection criteria.

2.   The method as recited in claim 1, wherein said selection criteria is a
probability function determined in association with a probability function
(120, 130, 140) selected from the group consisting of: color, textual, and
position.

3.   The method as recited in claim 2, wherein said positional probability function
is associated with a known portion of said image (210).

4.   The method as recited in claim 3, wherein said known image portion is
associated with an upper half of said image.

5.   The method as recited in claim 2, wherein said color probability function is
associated with the group comprising: color, luminosity in the YUV domain.

6.   The method as recited in claim 2, wherein said textual probability function is
associated with a group of adjacently located pixel elements (230).

7.   The method as recited in claim 3, wherein said known image portion is said
image.

8.   The method as recited in claim 2, wherein said step of refining said selection
criteria comprises the steps of:
        determining a threshold criteria associated with each of said selected
probability functions;
        identifying said pixel elements satisfying (320, 410,530) said threshold
criteria;
        determining an updated probability function (360, 420) for each of said

selected probability functions based on said identified pixel elements; and

determining said refined selection criteria (150)in conjunction with said updated probability functions.

9. The method as recited in claim 8, wherein said threshold criteria is a known factor of said selection criteria.

10. The method as recited in claim 9, wherein said known factor is based on said selected probability distribution.

11. A system (600) for adaptively segmenting pixel elements in an image frame comprising:

means (603, 604) for segmenting said pixel elements into a at least one first region based on a selection criteria (110);

means (603, 604) for refining said selection criteria based on information associated with each of said pixel elements within an associated region (150); and

means for segmenting (160) said image pixel elements into a at least one second region based on said refined selection criteria.

12. The system as recited in claim 11, wherein said selection criteria is a probability function determined in association with at least one probability function (120, 130, 140) selected from the group comprising: color, textual, position.

13. The system as recited in claim 12, wherein said positional probability function is associated with a known portion of said image (210).

14. The system as recited in claim 13, wherein said known image portion is associated with an upper half of said image.

15. The system as recited in claim 12, wherein said color probability function is associated with the group comprising: color, luminosity in the YUV domain.

16. The system as recited in claim 12, wherein said textual probability function is associated with a group of adjacently located pixel elements (230).

17. The system as recited in claim 13, wherein said known image portion is said image.

18. The system as recited in claim 12, further comprising:

means for determining a threshold criteria associated with each of said

selected probability functions;

    means for identifying said pixel elements satisfying (320, 410, 530) said threshold criteria;

    means for determining an updated probability function (360, 420) for each of said selected probability functions based on said identified pixel elements; and

    means for determining said refined selection criteria (150) in conjunction with said updated probability functions.

19.   The system as recited in claim 18, wherein said threshold criteria is a known factor of said selection criteria.

20.   The system as recited in claim 19, wherein said known factor is based on said selected probability distribution.

21.   The system as recited in claim 11, further comprising:

    means (602) for receiving said pixel elements from at least one input source.